

ABSTRACT OF THE DISCLOSURE

A cDNA encoding a 200 kD receptor, BT-R<sub>2</sub>, from the pink boll worm, *Pectinophora gossypiella*, that binds specifically to a *Bacillus thuringiensis* toxin has been cloned, sequenced and characterized. The minimum toxin binding fragment has  
5 been identified. The BT-R<sub>2</sub> cDNA permits the analysis of receptors in pink boll worm and other insects that affect crop growth and development, as well as, design assays for the cytotoxicity and binding affinity of potential pesticides. The clone and other methods described herein,  
10 permit the manipulation of natural and/or introduced homologous receptors and, thus, to specifically destroy organisms, tissues and/or cells of the target host.